

EML - Bug #1000

units missing from Unit Dictionary

02/21/2003 07:08 AM - Matt Jones

<b>Status:</b>	In Progress	<b>Start date:</b>	02/21/2003
<b>Priority:</b>	Immediate	<b>Due date:</b>	
<b>Assignee:</b>	Matt Jones	<b>% Done:</b>	0%
<b>Category:</b>	eml - general bugs	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	EML2.2.0	<b>Spent time:</b>	0.00 hour
<b>Bugzilla-Id:</b>	1000		
<b>Description</b> <p>The following excellent email from Don Henshaw addresses a large number of missing or problematic units in the unit dictionary. We need to 1) fix these and others that are identified, and 2) figure out how to release new versions of the eml-unitdictionary without releasing new versions of EML.</p> <p>----- Message from Don Henshaw -----</p> <p>David,</p> <p>I have reviewed the Andrews unit dictionary. The following are units of measurement that we have used at the Andrews that I did not find in eml-2.0.0\eml-unitDictionary.xml, as well as a few other notes.</p> <p>Thanks,</p> <p>don</p> <p>pressure: hectopascal (=100 pascals)</p> <p>volume: cubic centimeters</p> <p>volumetricArea: cubic meters per hectare</p> <p>volumetricArea: cubic meters per square meter</p> <p>massDensity: megagrams per cubic meter</p> <p>arealMassDensity: grams per square centimeter</p> <p>arealMassDensity: megagrams per hectare</p> <p>arealMassDensityRate: grams per square meter per day</p> <p>amountOfSubstanceWeight: micromoles per gram</p> <p>amountOfSubstanceWeightFlux: micromoles per gram per day</p> <p>amountOfSubstanceWeightFlux: micromoles per gram per hour</p> <p>amountOfSubstanceWeightFlux: nanomoles per gram per day</p> <p>amountOfSubstanceWeightFlux: nanomoles per gram per hour</p> <p>speed: inches per hour (used more as a rate than a speed)</p> <p>energy?: megajoule per square meter per day (solar radiation)</p> <p>energy?: langley (1 langley=4.187joules per square centimeter, 41870 joules per square meter)</p> <p>energy?: langleys per day (solar radiation)</p> <p>conductance?: micro mhos per centimeter</p> <p>I do not think there are unit types for the following (I assigned unit type names):</p> <p>massPerMassRate: micrograms per gram per day</p> <p>massPerMassRate: micrograms per gram per hour</p> <p>massPerMassRate: micrograms per gram per week</p> <p>massPerMassRate: nanograms per gram per hour</p> <p>areaPerArea: square meters per hectare</p> <p>luminanceRate??: micromoles per square meter per second (light measurement from LICOR instrument)</p> <p>Not sure how these fit:</p> <p>milliequivalents per 100 grams</p> <p>pH units</p> <p>ppm (parts per million)</p> <p>ppb (parts per billion)</p> <p>What about the following use of degrees, minutes, seconds?</p> <p>degrees azimuth</p>			

decimal degrees of latitude or longitude  
degrees, minutes, seconds of latitude, longitude

On another topic:

Can a julian date be represented in the format string for measurementScale of  
datetime i.e., YYYYddd

Other notes (being rather picky): pertaining to eml-unitDictionary.xml (2.0.0)

following units seems to show wrong abbreviation and multiplier

milliGramsPerMilliLiter

cubicMicrometersPerGram

The following unit names seem contrary to the convention of showing units in  
singular form:

squareCentimeters

squareMillimeters

squareKilometers

cubicMeterPerKilogram

Not all units show an abbreviation, even when an obvious one exists, ie., kg/ha  
or g/g liter shows "L" as the abbreviation

## History

### #1 - 03/21/2003 08:28 AM - Matt Jones

Scott Chapal submitted the following units as candidates as well:

---- Message from Scott Chapal -----

Working with our climate data, I found the need for:

kiloPascal

wattsPerMeterSquared

kiloJoulePerMeterSquared

Fuel Moisture % - percentWaterContentByWeight ??

Relative Humidity is presumably unitless?

---- End message -----

### #2 - 06/22/2004 10:08 AM - Saurabh Garg

Regarding this bug in the last meeting, it was decided we may try to implement  
a registry where people can submit units and it will go through a review  
process after that. Should we aim to implement it for version 2.1.0?

### #3 - 09/02/2004 09:38 AM - Matt Jones

Changing QA contact to the list for all current EML bugs so that people can  
track what is happening.

### #4 - 03/27/2013 02:15 PM - Redmine Admin

Original Bugzilla ID was 1000